Contents Volume 31:1 February 2008

Hurley, S. The shared circuits model: How control, mirroring, and simulation can enable imitation, deliberation, and mindreading 1

Open Peer Commentary

Behrendt, R.-P. The relationship between conscious phenomena and physical reality in behaviour control: The need for simplicity through phenomenological clarity 22

Carpendale, J. I. M. & Lewis, C. Mirroring cannot account for understanding action 23

Chakrabarti, B. & Baron-Cohen, S. Can the shared circuits model (SCM) explain joint attention or perception of discrete emotions? 24

Furey, L. & Keenan, J. P. The neural underpinnings of self and other and layer 2 of the shared circuits model 25

Garrod, S. & Pickering, M. J. Shared circuits in language and communication 26

Goldman, A. I. Does one size fit all? Hurley on shared circuits 27

Heyes, C. Imitation as a conjunction 28

Hove, M. J. Shared circuits, shared time, and interpersonal synchrony 29

Iacoboni, M. Mesial frontal cortex and super mirror neurons 30

Longo, M. R. & Bertenthal, B. I. Flexibility and development of mirroring mechanisms 31

Makino, T. Failure, instead of inhibition, should be monitored for the distinction of self/other and actual/possible actions 32

Nielsen, M. The social motivation for social learning 33

Northoff, G. What kind of neural coding and self does Hurley's shared circuit model presuppose? 33

Oberman, L. M. & Ramachandran, V. S. How do shared circuits develop? 34

Paglieri, F. & Castelfranchi, C. More than control freaks: Evaluative and motivational functions of goals 35

Preston, S. D. Putting the subjective back into intersubjective: The importance of person-specific, distributed, neural representations in perception-action mechanisms 36

Semin, G. R. & Cacioppo, J. T. In search of a conceptual location to share cognition 37

van Rooij, I., Haselager, W. & Bekkering, H. Goals are not implied by actions, but inferred from actions and contexts 38

Whiten, A. Imitation, emulation, and the transmission of culture 39

Williams, J. H. G. Imitation and the effort of learning 40

Response

Kiverstein, J. & Clark, A. Bootstrapping the mind 41

Erickson, R. P. A study of the science of taste: On the origins and influence of the core ideas 59

Open Peer Commentary

Belpaeme, T. Insights from the colour category controversy 75

Booth, D. A. Salty, bitter, sweet and sour survive unscathed 76

Cutting, J. E. Criteria for basic tastes and other sensory primaries 77

Di Lorenzo, P. M. & Chen, J.-Y. Basic tastes as cognitive concepts and taste coding as more than spatial 78

Fox, E. A. The labeled line / basic taste versus across-fiber pattern debate: A red herring? 79

Gallo, M. Taste learning in rodents: Compounds and individual taste cues recognition 80

Handel, S. The nature of economical coding is determined by the unique properties of objects in the environment 81

Hilbert, D. R. Basic tastes and unique hues 82

Kennedy, L. M. & Gonzalez, K. M. Taste quality coding in vertebrate receptor molecules and cells 82

Lavine, M. Mathematical techniques and the number of groups 83

Lemon, C. H. On the analysis of spatial neural codes in taste 84

Logue, A. W. The complex facts of taste 85

Majid, A. & Levinson, S. C. Language does provide support for basic tastes 86

Roessner, V., Rothenberger, A., & Duchamp-Viret, P. And what about basic odors? 87
Sander, D. Basic tastes and basic emotions: Basic problems and perspectives for a nonbasic solution 88
Scott, T. R. The neural structure and organization of taste 89
Stillman, J. A. Should labeled lines and pattern models be either-or? Issues of scope and definition 89
Warren, R. M. Synthesizing complex sensations from simple components 90

Author's Response
Erickson, R. P. The pervasive core idea in taste is inadequate and misleading 91

Contents Volume 31:2 April 2008

Penn, D. C., Holyoak, K. J. & Povinelli, D. J. Darwin's mistake: Explaining the discontinuity between human and nonhuman minds 109

Open Peer Commentary

Barrett, L. Out of their heads: Turning relational reinterpretation inside out 130

Bermúdez, J. L. The reinterpretation hypothesis: Explanation or redescription? 131

Bickerton, D. Darwin's last word: How words changed cognition 132

Bridgeman, B. The role of motor-sensory feedback in the evolution of mind 132

Burghardt, G. M. The sun always rises: Scientists also need semantics 133

Emery, N. J. & Clayton, N. S. Imaginative scrub-jays, causal rooks, and a liberal application of Occam's aftershave 134

Gardner, R. A. Comparative intelligence and intelligent comparisons 135

Gentner, D. & Christie, S. Relational language supports relational cognition in humans and apes 136

Halford, G. S., Phillips, S. & Wilson, W. H. The missing link: Dynamic, modifiable representations in working memory 137

Hallinan, E. V. & Kuhlmeier, V. A. Ontogeny, phylogeny, and the relational reinterpretation hypothesis 138

Herman, L. M., Uyeyama, R. K. & Pack, A. A. Bottlenose dolphins understand relationships between concepts 139

Lupyan, G. Taking symbols for granted? Is the discontinuity between human and nonhuman minds the product of external symbol systems? 140

Markman, A. B. & Stilwell, C. H. An amicus for the defense: Relational reasoning magnifies the behavioral differences between humans and nonhumans 142

McGonigle, B. & Chalmers, M. Putting Descartes before the horse (again!) 142

Pepperberg, I. M. Difficulties with "humaniqueness" 143

Rendall, D., Vokey, J. R. & Notman, H. Quotidian cognition and the human-nonhuman "divide": Just more or less of a good thing? 144

Shatz, M. Language as a consequence and an enabler of the exercise of higher-order relational capabilities: Evidence from toddlers 145

Siegal, M. & Varley, R. If we could talk to the animals 146

Suddendorf, T. Explaining human cognitive autapomorphies 147

Tetzlaff, M. & Carruthers, P. Languages of thought need to be distinguished from learning mechanisms, and nothing yet rules out multiple distinctively human learning systems 148

Thompson, R. K. R. & Flemming, T. M. Analogical apes and paleological monkeys revisited 149

Tomlinson, M. T. & Love, B. C. Monkey see, monkey do: Learning relations through concrete examples 150

Wasserman, E. A. On possible discontinuities between human and nonhuman minds 151

Wynne, C. D. L. & Bolhuis, J. J. Minding the gap: Why there is still no theory in comparative psychology 152

Authors' Response

Penn, D. C., Holyoak, K. J. & Povinelli, D. J. Darwin's triumph: Explaining the uniqueness of the human mind without a *deus ex machina* 153

Nijhawan, R. Visual prediction: Psychophysics and neurophysiology of compensation for time delays 179

Open Peer Commentary

Baldo, M. V. C. & Klein, S. A. Shifting attention to the flash-lag effect 198

Balkenius, C. & Gärdenfors, P. Anticipation requires adaptation 199

Beguigui, N., Baurès, R. & Le Runigo, C. Visuomotor delay in interceptive actions 200

Berzhanskaya, J. Flash-lag: Prediction or emergent property of directional selectivity mechanisms? 201

Changizi, M. A. The trade-off between speed and complexity 203

Cunningham, D. W. Visual prediction as indicated by perceptual adaptation to temporal delays and discrete stimulation 203

Cutting, J. E. Asynchronous neural integration: Compensation or computational tolerance and skill acquisition? 204
Eagleman, D. M. Prediction and postdiction: Two frameworks with the goal of delay compensation 205
Howe, P. D., Horowitz, T. S. & Wolfe, J. M. Transient signals per se do not disrupt the flash-lag effect 206
Kerzel, D. & Müsseler, J. Mental and sensorimotor extrapolation fare better than motion extrapolation in the offset condition 206
Khurana, B. What's in a name change? Visual prediction makes extrapolation real and functional 207
Krekelberg, B. Perception of direction is not compensated for neural latency 208
Lin, Z. Unconscious inference and conscious representation: Why primary visual cortex (V1) is directly involved in visual awareness 209
Mayo, J. P. & Sommer, M. A. Neuronal adaptation: Delay compensation at the level of single neurons? 210
McFarland, D. J. Phase-alignment of delayed sensory signals by adaptive filters 212
Öğmen, H., Patel, S. S., Purushothaman, G. & Bedell, H. E. Moving backward through perceptual compensation 212
Purushothaman, G., Bedell, H. E., Öğmen, H. & Patel, S. S. Neurophysiology of compensation for time delays: Visual prediction is off track 214
Sheth, B. R. & Wu, D.-A. Single mechanism, divergent effects; multiple mechanisms, convergent effect 215
Smeets, J. B. J. & Brenner, E. The mechanisms responsible for the flash-lag effect cannot provide the motor prediction that we need in daily life 215
Stepp, N. & Turvey, M. T. Anticipating synchronization as an alternative to the internal model 216
Trautteur, G., Datteri, E. & Santoro, M. Empirically testable models are needed for understanding visual prediction 217
van de Grind, W. Motion as a reference for positions 218
Wagman, J. B. Perception-action as reciprocal, continuous, and prospective 219
Whitney, D. Visuomotor extrapolation 220
Zago, M. & Lacquaniti, F. Compensation for time delays is better achieved in time than in space 221

Author's Response
Nijhawan, R. Predictive perceptions, predictive actions, and beyond 222

Contents Volume 31:3 June 2008

Crespi, B. & Badcock, C. Psychosis and autism as diametrical disorders of the social brain 241

Open Peer Commentary

Abu-Akel, A. Theory of mind in autism, schizophrenia, and in-between 261
Behrendt, R.-P. Mapping autism and schizophrenia onto the ontogenesis of social behaviour: A hierarchical-developmental rather than diametrical perspective 262
Belmonte, M. K. The "mechanism" of human cognitive variation 263
Burne, T. H. J., Eyles, D. W. & McGrath, J. J. Animal models may help fractionate shared and discrete pathways underpinning schizophrenia and autism 264
Davies, W. & Isles, A. R. Genomic imprinting and disorders of the social brain: shades of grey rather than black and white 265
Deutsch, C. K., Ludwig, W. W. & McIlvane, W. J. Heterogeneity and hypothesis testing in neuropsychiatric illness 266
Dickins, B. J. A., Dickins, D. W. & Dickins, T. A. Is this conjectural phenotypic dichotomy a plausible outcome of genomic imprinting? 267
Fitzgerald, M. & Hawi, Z. Creativity, psychosis, autism, and the social brain 268
Frawley, W. Private speech, cognitive-computational control, and the autism-psychosis continuum 269
Goos, L. M. Imprinting and psychiatric genetics: Beware the diagnostic phenotype 270
Haig, D. Kinship asymmetries and the divided self 271
Kanazawa, S. Are schizophrenics more religious? Do they have more daughters? 272
Keller, M. C. Problems with the imprinting hypothesis of schizophrenia and autism 273
Langdon, R. & Brock, J. Hypo- or hyper-mentalizing: It all depends upon what one means by "mentalizing" 274
Nettle, D. Why is creativity attractive in a potential mate? 275
Oberman, L. M. & Pascual-Leone, A. Cortical plasticity: A proposed mechanism by which genomic factors lead to the behavioral and neurological phenotype of autism spectrum and psychotic-spectrum disorders 276
Thakkar, K. N., Matthews, N. & Park, S. A complete theory of psychosis and autism as diametric disorders of social brain must consider full range of clinical syndromes 277
Tordjman, S. Reunifying autism and early-onset schizophrenia in terms of social communication disorders 278
Troisi, A. Psychiatric disorders and the social brain: Distinguishing mentalizing and empathizing 279
van Rijn, S., Swaab, H. & Aleman, A. Psychosis and autism as two developmental windows on a disordered social brain 280
Venkatasubramanian, G. Evolutionary perspectives on psychoses and autism: Does genomic imprinting contribute to phenomenological antithesis? 281
Vladusich, T. Towards a computational neuroscience of autism-psychosis spectrum disorders 282
Voracek, M. Digit ratio (2D:4D) as a marker for mental disorders: Low (masculinized) 2D:4D in autism-spectrum disorders, high (feminized) 2D:4D in schizophrenic-spectrum disorders 283

Authors' Response

Crespi, B. & Badcock, C. The evolutionary social brain: From genes to psychiatric conditions 284

Sirois, S., Spratling, M., Thomas, M. S. C., Westermann, G., Mareschal, D. & Johnson, M. H. Précis of *Neuroconstructivism: How the Brain Constructs Cognition* 321

Open Peer Commentary

Anderson, M. L. Are interactive specialization and massive redeployment compatible? 331

Bateson, P. A good approach to neural and behavioural development but would be even better if set in a broader context 334

Bremner, A. J. & Spence, C. Unimodal experience constrains while multisensory experiences enrich cognitive construction 335

Campos, R. & Sotillo, M. Constructing minds: The development of mindreading abilities in typical and atypical trajectories 336

Ferber, S. G. The concept of coregulation between neurobehavioral subsystems: The logic interplay between excitatory and inhibitory ends 337

Foster, J., van Eekelen, A. & Mattes, E. Neuroconstructivism: Evidence for later maturation of prefrontally mediated executive functioning 338

French, R. M. A new manifesto for child development research 339

Innocenti, G. M. Selectionistic neurocostructivism in evolution and development 340

Kotchoubey, B. Beyond mechanism and constructivism 341

Lickliter, R. Representing development: models, meaning, and the challenge of complexity 342

Pribram, K. It's high time: Cognitive neuroscience lives 343

Shultz, T. R. Toward automatic constructive learning 344

Authors' Response

Thomas, M. S. C., Westermann, G., Mareschal, D., Johnson, M. H., Sirois, S. & Spratling, M. Studying development in the 21st Century 345

Contents Volume 31:4 August 2008

Leech, R., Mareschal, D. & Cooper, R. P. Analogy as relational priming: A developmental and computational perspective on the origins of a complex cognitive skill 357

Open Peer Commentary

Akman, V. Relational priming: Obligational nitpicking 378
Borges, R. V., d'Avila Garcez, A. S. & Lamb, L. C. A neural-symbolic perspective on analogy 379
Bouissac, P. The evolution of priming in cognitive competencies: To what extent is analogical reasoning adaptive? 380
Cheshire, A., Ball, L. J. & Lewis, C. N. Analogy as relational priming: The challenge of self-reflection 381
Costello, F. J. Analogy is priming, but relations are not transformations 382
Dietrich, E. Toward extending the relational priming model: Six questions 383
Doumas, L. A. A. & Richland, L. E. Developing structured representations 384
Estes, Z. & Jones, L. L. Relational processing in conceptual combination and analogy 385
French, R. M. Relational priming is to analogy-making as one-ball juggling is to seven-ball juggling 386
Goswami, U. Analogy and the brain: A new perspective on relational primacy 387
Greene, A. J. Implicit analogy: New direct evidence and a challenge to the theory of memory 388
Holyoak, K. J. & Hummel, J. E. No way to start a space program 388
Linhares, A. Dynamic sets of potentially interchangeable connotations: A theory of mental objects 389
Markman, A. B. & Laux, J. P. Analogical inferences are central to analogy 390
Morrison, R. G. & Cho, S. Neurocognitive process constraints on analogy: What changes to allow children to reason like adults? 391
Petrov, A. A. Relational priming plays a supporting but not leading role in adult analogy-making 392
Phillips, S. Abstract analogies not primed by relations learned as object transformations 393
Raffray, C. N., Pickering, M. J. & Branigan, H. P. Relation priming, the lexical boost, and alignment in dialogue 394
Schwering, A. & Kühnberger, K.-U. Child versus adult analogy: The role of systematicity and abstraction in analogy models 395
Sloutsky, V. M. Analogy is to priming as relations are to transformations 396
Speed, A. Computational modeling of analogy: Destined ever to only be metaphor? 397
Swain, J. E. & Swain, J. D. Creativity or mental illness: Possible errors of relational priming in neural networks of the brain 398
Wareham, T., van Rooij, I. & Müller, M. Computational complexity analysis can help, but first we need a theory 399
Wasserman, E. A. Development and evolution of cognition: One doth not fly into flying! 400

Authors' Response

Leech, R., Mareschal, D. & Cooper, R. P. Growing cognition from recycled parts 401

Redish, A. D., Jensen, S. & Johnson, A. A unified framework for addiction: Vulnerabilities in the decision process 415

Open Peer Commentary

Ahmed, S. H. The origin of addictions by means of unnatural decision 437
Ainslie, G. Vulnerabilities to addiction must have their impact through the common currency of discounted reward 438
Andreou, C. Addiction, procrastination, and failure points in decision-making systems 439
Berridge, K. C., Zhang, J. & Aldridge, J. W. Computing motivation: Incentive salience boosts of drug or appetite states 440
Bickel, W. K. & Yi, R. Addiction science as a hedgehog and as a fox 441
Boden, J. M. Social influence and vulnerability 442
Chambers, R. A. Impulsivity, dual diagnosis, and the structure of motivated behavior in addiction 443

Coventry, K. R. Gambling and decision-making: A dual process perspective 444
Goudie, A. J., Field, M. & Cole, J. Different vulnerabilities for addiction may contribute to the same phenomena and some additional interactions 445
Griffiths, M. D. The biopsychosocial and "complex" systems approach as a unified framework for addiction 446
Hardcastle, V. G. Neither necessary nor sufficient for addiction 447
Hart, C. L. & Krauss, R. M. Human drug addiction is more than faulty decision-making 448
Khalil, E. L. Are addictions "biases and errors" in the rational decision process? 449
Kiviniemi, M. T. & Bevins, R. A. Role of affective associations in the planning and habit systems of decision-making related to addiction 450
Le Moal, M. Negative affects are parts of the addiction syndrome 451
Lejuez, C. W. & Potenza, M. N. Expanding the range of vulnerabilities to pathological gambling: A consideration of over-fast discounting processes 452
Lende, D. H. Addiction: More than innate rationality 453
MacCoun, R. J. Bridging the gap between science and drug policy: From "what" and "how" to "whom" and "when" 454
Neal, D. T. & Wood, W. Linking addictions to everyday habits and plans 455
Ostlund, S. B. & Balleine, B. W. The disunity of Pavlovian and instrumental values 456
Ross, D. Timing models of reward learning and core addictive processes in the brain 457
Sarnecki, J., Traynor, R. & Clune, M. Cue fascination: A new vulnerability in drug addiction 458
Stalnaker, T. & Schoenbaum, G. E pluribus unum? A new take on addiction by Redish et al. 459
Wiers, R. W., Havermans, R., Deutsch, R. & Stacy, A. W. A mismatch with dual process models of addiction rooted in psychology 460
Yin, H. The elephantine shape of addiction 461

Authors' Response
Redish, A. D., Jensen, S. & Johnson, A. Addiction as vulnerabilities in the decision process 461

Contents Volume 31:5 October 2008

Christiansen, M. H. & Chater, N. Language as shaped by the brain 489

Open Peer Commentary

Aronoff, M., Meir, I., Padden, C. & Sandler, W. Language is shaped by the body 509

Barrett, H. C., Frankenhuis, W. E. & Wilke, A. Adaptation to moving targets: Culture/gene coevolution, not either/or 511

Behme, C. Languages as evolving organisms – *The* solution to the logical problem of language evolution? 512

Blackmore, S. Memes shape brains shape memes 513

Brooks, P. J. & Ragir, S. Prolonged plasticity: Necessary and sufficient for language-ready brains 514

Caldwell, C. A. Convergent cultural evolution may explain linguistic universals 515

Catania, A. C. Brain and behavior: Which way does the shaping go? 516

Corballis, M. C. Time on our hands: How gesture and the understanding of the past and future helped shape language 517

de Ruiter, J. P. & Levinson, S. C. A biological infrastructure for communication underlies the cultural evolution of languages 518

Dessalles, J.-L. Why is language well designed for communication? 518

Enfield, N. J. Language as shaped by social interaction 519

Fauconnier, G. & Turner, M. The origin of language as a product of the evolution of double-scope blending 520

Fitch, W. T. Co-evolution of phylogeny and glossogeny: There is no "logical problem of language evolution" 521

Goldberg, A. E. Universal Grammar? Or prerequisites for natural language? 522

Greenfield, P. M. & Gillespie-Lynch, K. Intersubjectivity evolved to fit the brain, but grammar co-evolved with the brain 523

Harnad, S. Why and how the problem of the evolution of Universal Grammar (UG) is hard 524

Hurford, J. R. Niche-construction, co-evolution, and domain-specificity 526

Landauer, T. K. Language enabled by Baldwinian evolution of memory capacity 526

Lieberman, P. Cortical-striatal-cortical neural circuits, reiteration, and the "narrow faculty of language" 527

Namy, L. L. & Nygaard, L. C. Perceptual-motor constraints on sound-to-meaning correspondence in language 528

Pagel, M. & Atkinson, Q. D. The potential for genetic adaptations to language 529

Piattelli-Palmarini, M., Hancock, R. & Bever, T. Language as ergonomic perfection 530

Reuland, E. On language and evolution: Why neo-adaptationism fails 531

Satterfield, T. Language acquisition recapitulates language evolution? 532

Smith, K., Kirby, S. & Smith, A. D. M. The brain plus the cultural transmission mechanism determine the nature of language 533

Tallerman, M. Case-marking systems evolve to be easy to learn and process 534

Toscano, J. C., Perry, L. K., Mueller, K. L., Bean, A. F., Galle, M. E. & Samuelson, L. K. Language as shaped by the brain: the brain as shaped by development 535

Wallentin, M. & Frith, C. D. Language is shaped for social interactions, as well as by the brain 536

Authors' Response

Christiansen, M. H. & Chater, N. Brains, genes, and language evolution: A new synthesis 537

Juslin, P. N. & Västfjäll, D. Emotional responses to music: The need to consider underlying mechanisms 559

Open Peer Commentary

Agostino, P. V., Peryer, G. & Meck, W. H. How music fills our emotions and helps us keep time 575
Alcorta, C. S., Sosis, R. & Finkel, D. Ritual harmony: Toward an evolutionary theory of music 576
Bezdek, M. A. & Gerrig, R. J. Musical emotions in the context of narrative film 578
Bharucha, J. J. & Curtis, M. Affective spectra, synchronization, and motion: Aspects of the emotional response to music 579
Fritz, T. & Koelsch, S. The role of semantic association and emotional contagion for the induction of emotion with music 579
Gardiner, M. F. Responses to music: Emotional signaling, and learning 580
Holochwost, S. J. & Izard, C. E. Evidence from young children regarding emotional responses to music 581
Konečni, V. J. A skeptical position on "musical emotions" and an alternative proposal 582
Krumhansl, C. L. & Agres, K. R. Musical expectancy: The influence of musical structure on emotional response 584
Lenti Boero, D. & Bottoni, L. Why we experience musical emotions: Intrinsic musicality in an evolutionary perspective 585
Longhi, E. Emotional responses in musical mother-infant interactions: A developmental perspective 586
Madison, G. What about the music? Music-specific functions must be considered in order to explain reactions to music 587
Malmgren, H. Identifying and individuating the psychological mechanisms that underlie musical emotions 587
Moors, A. & Kuppens, P. Distinguishing between two types of musical emotions and reconsidering the role of appraisal 588
Patel, A. D. A neurobiological strategy for exploring links between emotion recognition in music and speech 589
Peretz, I. The need to consider underlying mechanisms: A response from dissonance 590
Provine, R. R. Notation and expression of emotion in operatic laughter 591
Robinson, J. Do all musical emotions have the music itself as their intentional object? 592
Rozin, A. & Rozin, P. Feelings and the enjoyment of music 593
Schellenberg, E. G. The role of exposure in emotional responses to music 594
Scherer, K. & Zentner, M. Music evoked emotions *are* different – more often aesthetic than utilitarian 595
Simpson, E. A., Oliver, W. T. & Fragaszy, D. Super-expressive voices: Music to my ears? 596
Thompson, W. F. & Coltheart, M. The role of signal detection and amplification in the induction of emotion by music 597
Trehub, S. E. Music as a dishonest signal 598
Vuust, P. & Frith, C. D. Anticipation is the key to understanding music and the effects of music on emotion 599

Authors' Response

Juslin, P. N. & Västfjäll, D. All emotions are not created equal: Reaching beyond the traditional disputes 600

Contents Volume 31:6 December 2008

Rips, L. J., Bloomfield, A. & Asmuth, J. From numerical concepts to concepts of number 623

Open Peer Commentary

Andres, M., Di Luca, S. & Pesenti, M. Finger counting: The missing tool? 642

Barner, D. In defense of intuitive mathematical theories as the basis for natural number 643

Barth, H. Do mental magnitudes form part of the foundation for natural number concepts? Don't count them out yet 644

Carey, S. Math schemata and the origins of number representations 645

Chiang, W.-C. What is still needed? On nativist proposals for acquiring concepts of natural numbers 646

Cohen Kadosh, R. & Walsh, V. From magnitude to natural numbers: A developmental neurocognitive perspective 647

Cowan, R. Differences between the philosophy of mathematics and the psychology of number development 648

Decock, L. Neo-Fregeanism naturalized: The role of one-to-one correspondence in numerical cognition 648

De Cruz, H. Bridging the gap between intuitive and formal number concepts: An epidemiological perspective 649

Fias, W. & Verguts, T. Not all basic number representations are analog: Place coding as a precursor of the natural number system 650

Fischer, M. H. & Mills, R. A. A spatial perspective on numerical concepts 651

Gardiner, M. F. Music training, engagement with sequence, and the development of the natural number concept in young learners 652

Gelman, R. Counting and arithmetic principles first 653

Gordon, P. Look Ma, no fingers! Are children numerical solipsists? 654

Halberda, J. & Feigenson, L. Set representations required for the acquisition of the "natural number" concept 655

Hintzman, D. L. Recursive reminding and children's concepts of number 656

Hodes, H. T. On some concepts associated with finite cardinal numbers 657

Lakoff, G. The role of the brain in the metaphorical mathematical cognition 658

Le Corre, M. Why cardinalities are the "natural" natural numbers 659

Lourenco, S. F. & Levine, S. C. Early numerical representations and the natural numbers: Is there really a complete disconnect? 660

Martins-Mourao, A. & Karmiloff-Smith, A. Specific and general underpinnings to number: parallel development 661

Mix, K. S. The origins of number: Getting developmental 662

Morris, B. J. & Masnick, A. M. Making numbers out of magnitudes 662

Muldoon, K., Lewis, C. & Freeman, N. Don't throw the baby out with the math water: Why discounting the developmental foundations of early numeracy is premature and unnecessary 663

Noël, M.-P., Grégoire, J., Meert, G. & Seron, X. The innate schema of natural numbers does not explain historical, cultural, and developmental differences 664

Núñez, R. E. Proto-numerosities and concepts of number: Biologically plausible and culturally mediated top-down mathematical schemas 665

Pietroski, P. & Lidz, J. Natural number concepts: No derivation without formalization 666

Read, D. Learning natural numbers is conceptually different than learning counting numbers 667

Sarnecka, B. W. SEVEN does not mean NATURAL NUMBER, and children know more than you think 668

Smith, L. Mathematical induction and its formation during childhood 669

Sophian, C. Precursors to number: Equivalence relations, less-than and greater-than relations, and units 670

Authors' Response 671

Rips, L. J., Bloomfield, A. & Asmuth, J. Dissonances in theories of number understanding

Rogers, T. T. & McClelland, J. L. Précis of *Semantic Cognition: A Parallel Distributed Processing Approach* 689

Open Peer Commentary

Borsboom, D. & Visser, I. Semantic cognition or data mining? 714

Feeney, A., Crisp, A. K. & Wilburn, C. J. Inductive reasoning and semantic cognition: More than just different names for the same thing? 715

Hampton, J. A. Context, categories and modality: Challenges for the Rumelhart model 716

Kemp, C. & Tenenbaum, J. B. Structured models of semantic cognition 717

Kropff, E. & Treves, A. Semantic cognition: Distributed, but then attractive 718

MacDonald, A. W., III. A sneaking suspicion: The semantics of emotional beliefs and delusions 719

Majid, A. & Huettig, F. A crosslinguistic perspective on semantic cognition 720

Mandler, J. M. Some suggested additions to the semantic cognition model 721

Marcus, G. F. & Keil, F. C. Concepts, correlations, and some challenges for connectionist cognition 722

Opfer, J. E. & Doumas, L. A. A. Analogy and conceptual change in childhood 723

Quinlan, P. Time for a re-think: Problems with the parallel distributed approach to semantic cognition 724

Quinn, P. C. On the semantics of infant categorization and why infants perceive horses as humans 724

Rakison, D. H. & Lupyan, G. The development of modeling or the modeling of development? 726

Robbins, S. E. Semantic redintegration: Ecological invariance 726

Snedeker, J. Reading *Semantic Cognition* as a theory of concepts 727

ter Meulen, A. G. B. Agency, argument structure, and causal inference 728

Authors' Response 729

Rogers, T. T. & McClelland, J. L. A simple model from a powerful framework that spans levels of analysis

Erratum

Juslin, P. N. & Västfjäll, D. Emotional responses to music: The need to consider underlying mechanisms 751